

**Notice of Allowability**

Application No.

10/768,368

Examiner

Jacob Y. Choi

Applicant(s)

BUELOW ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to October 2, 2006.
2. ☒ The allowed claim(s) is/are 1-25, 35 and 36.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                            |                                                                                                                       |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 5. <input type="checkbox"/> Notice of Informal Patent Application                                                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>November 29, 2006</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                                                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                                  |
|                                                                                                            | 9. <input type="checkbox"/> Other _____                                                                               |

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Charles E. Bruzga on November 29, 2006.

The application has been amended as follows:

a. Amend claim 1 – "... c) *an electrical driver within the enclosure comprising an electrical or electromagnetic device for converting voltage and/or limiting current to the light appliance or for both connecting voltage and limiting current to the light appliance; ... etc.*"

b. Amend claim 3 – "*The combination of Claim 1 -h), wherein the filamented lamp comprises molybdenum leads.*"

c. Amend claim 4 – "*The combination of Claim 1 -h), wherein the lamp is a halogen lamp.*"

d. Amend claim 9 – "*The combination of Claim 1, wherein the light appliance further comprise a heat sink for removing heat from the light appliance.*"

e. Amend claim 21 – "... c) *an electrical driver within the enclosure comprising an electrical or electromagnetic device for converting voltage and/or limiting*

*current to the light appliance or for both connecting voltage and limiting current to the light appliance; ... etc."*

### **Allowable Subject Matter**

3. The following is an examiner's statement of reasons for allowance:

Independent claim **1** recites "A light appliance and a cooling arrangement comprising: a) a light appliance; b) a liquid-tight enclosure for the light appliance that gives off unwanted heat into surrounding air within the enclosure during operation, the enclosure having an external wall at least part of which is thermally conductive; c) an electrical driver within the enclosure comprising an electrical or electromagnetic device for converting voltage and/or limiting current to the light appliance; d) an air circulating device within the enclosure for circulating air, heated by the light appliance or by the air circulating device, to the thermally conductive portion of the external wall; e) a medium that is in contact with said external wall of the enclosure; the medium (i) having adequate thermal conductivity; and (ii) being sufficiently cooler than the external wall of the enclosure that the air circulating device removes sufficient heat from the air by dissipating the heat into the cooler medium through said thermally conductive portion so as to substantially increase lifetime of the light appliance; f) the enclosure being free of a channel formed between an interior surface of the external wall of the enclosure to receive forced air heated by the light appliance and a sleeve liner surrounding the light appliance, for controllably recirculating forced air within the enclosure; g) the external wall being free of multiple heat fins extending between an inner surface of the external wall and the sleeve liner; and h) the enclosure being free of a one-way air valve that opens a passage into the interior of the enclosure from the exterior of the enclosure when the pressure on a portion of the valve at the exterior of the enclosure exceeds the pressure on a portion of the valve at an interior of the enclosure."

Independent claim **21** recites "A light appliance with a cooling arrangement, comprising: a) a light appliance; b) a liquid-tight enclosure for the light appliance that gives off unwanted heat into surrounding air within the enclosure during operation, the enclosure having an external wall at least part of which is thermally conductive; c) an electrical driver within the enclosure comprising an electrical or electromagnetic device for converting voltage and/or limiting current to the light appliance; d) an air circulating device within the enclosure for circulating air, heated by the light appliance or by the air circulating device, to the thermally conductive portion of the external wall; e) a medium comprising water that is in contact with said external wall of the enclosure; the medium (i) having adequate thermal conductivity; and (ii) being sufficiently cooler than the external wall of the enclosure that the air circulating device removes sufficient heat from the air by dissipating the heat into the cooler medium through said thermally conductive portion so as to substantially increase lifetime of the light appliance; and f) the enclosure being free of a channel formed between an interior surface of the external wall of the

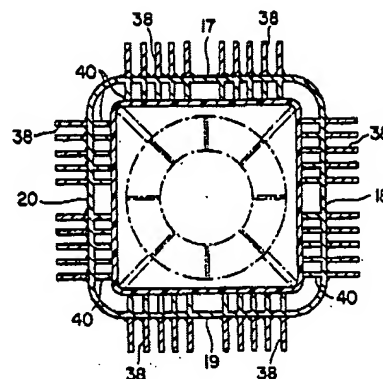
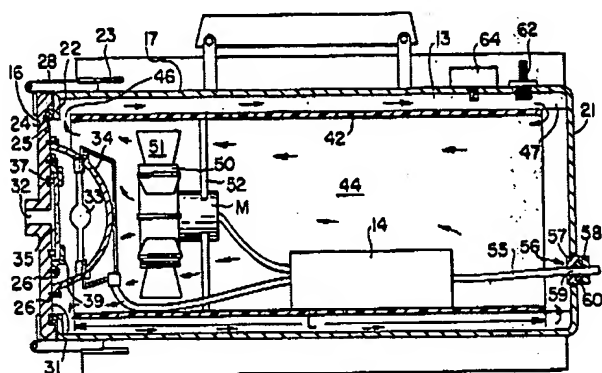
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*enclosure to receive forced air heated by the light appliance and a sleeve liner surrounding the light appliance, for controllably recirculating forced air within the enclosure; g) the external wall being free of multiple heat fins extending between an inner surface of the external wall and the sleeve liner; and h) the enclosure being free of a one-way air valve that opens a passage into the interior of the enclosure from the exterior of the enclosure when the pressure on a portion of the valve at the exterior of the enclosure exceeds the pressure on a portion of the valve at an interior of the enclosure."*

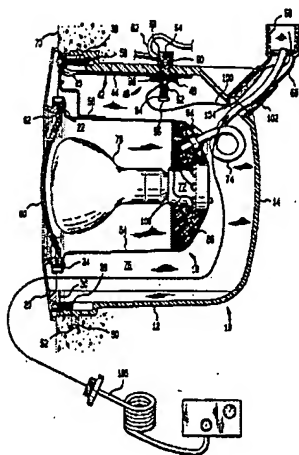
Koo (USPN 4,419,716) teaches a light appliance (e.g., 33, 34), a sealed vapor proof enclosure (e.g., column 1, lines 42-54; "... *The housing assembly of the present invention comprises a sealed enclosure for isolating an electrical device within a protective atmosphere and a cooling system ... in order to maintain the temperature of the sealed housing within safe limits ... The latter feature provides assurance that the housing assembly is truly sealed and leak free ... etc.*") for the light appliance (e.g., 33, 34) that gives off unwanted heat into surrounding air within the enclosure (e.g., 12) during operation, the enclosure (e.g., 12) having an external wall (e.g., 17-20) at least part of which is thermally conductive (e.g., 38), a medium (e.g., Abstract; "... *ambient atmosphere ... etc.*") that is in contact with the external wall of the enclosure, the medium having adequate thermal conductivity, and being sufficiently cooler than the external wall of the enclosure that cooler than the external wall (e.g., 17-20; columns 2-3, lines 65-25) of the enclosure (e.g., 12), an electrical driver (e.g., Figure 4, 3) comprising an electrical or electromagnetic device (e.g., column 4, lines 30-55) for converting voltage and limiting current to the light appliance, and an air circulating device (e.g., 50) for circulating air, heated by the light appliance (e.g., 12) or by the air circulating device (e.g., 50), to the thermally conductive portion of the external wall (e.g.,

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16-20) for removing sufficient heat from the air by thermally dissipating the heat into the cooler medium through the thermally conductive portion (e.g., columns 2-3, lines 65-25) so as to substantially increase lifetime of the light appliance.



Tobias et al. (USPN 5,432,688) teaches the light fixture assembly having the liquid-tight enclosure (e.g., column 3, lines 40-55; "... the shell 54 of the light fixture 18 is sealed by virtue of a lens plate 80 and a gasket 82, which cooperate to prevent water from entering the shell 54. In addition, a cable seal 84 is provided to prevent water from entering the shell 54 at the point of entry of the power cable 74 ..." & "... a space 76 between the interior surface of the housing 12 and the shell 54 of the lighting fixture 18 accommodates water which serves to cool the lighting fixture 18 when it is heated by an incandescent bulb 78 ...").



Applicant's arguments, see pages 6-14, filed October 2, 2006, with respect to claims 1-34 have been fully considered and are persuasive such as "... *claims 1 & 21 solve the thermal issue of keeping an electrical driver for a lamp to a tolerable limit to substantially increase lifetime of the lamp/light appliance ... the examiner has failed to shown any known interchangeability between the presently claimed "medium" with its specifically defined thermal properties, etc., and the foregoing, three heat removal mechanisms of Koo*". Three heat removal mechanisms being a) channel between inner surface of external wall of assembly and sleeve liner b) heat-exchange fins extending into the cooling channel, and c) one-way air valve to enable pressurization for increasing heat-removal from the assembly. The claim rejections - 35 USC § 103 of June 8, 2006 has been withdrawn. Because None of the references disclosed the detailed teachings with free of the three heat removal mechanisms nor is there any motivation to remove them from the Koo reference, the claims are deemed patentable over the prior art of record.

4. Claims **1-25, 35 and 36** are allowed.

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5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Amendment***

6. Examiner acknowledges that the applicant has amended claims 1 and 21, canceled claims 26-34, and newly added claims 35 and 36. Currently, claims **1-25, 35 and 36** are pending in the application.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y. Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacob Y Choi  
Examiner  
Art Unit 2875

JC



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Supervisory Patent Examiner  
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